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NEWS 10	NOV 30	PHAR reloaded with additional data
NEWS 11	DEC 01	LISA now available on STN
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FULL ESTIMATED COST	0.21	0.21

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FILE COVERS 1907 - 8 Dec 2004 VOL 141 ISS 24
FILE LAST UPDATED: 7 Dec 2004 (20041207/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

```
=> s amorphous celecoxib
        237291 AMORPHOUS
             4 AMORPHOUSES
        237295 AMORPHOUS
                  (AMORPHOUS OR AMORPHOUSES)
          1332 CELECOXIB
L1           5 AMORPHOUS CELECOXIB
                  (AMORPHOUS(W)CELECOXIB)

=> s amorphous(w)celecoxib
        237291 AMORPHOUS
             4 AMORPHOUSES
        237295 AMORPHOUS
                  (AMORPHOUS OR AMORPHOUSES)
          1332 CELECOXIB
L2           5 AMORPHOUS(W)CELECOXIB

=> s l1 and calorimetry
         52747 CALORIMETRY
            20 CALORIMETRIES
         52758 CALORIMETRY
                  (CALORIMETRY OR CALORIMETRIES)
L3           1 L1 AND CALORIMETRY

=> d l2 ibib abs hitstr tot
```

L2 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2004:782310 CAPLUS
DOCUMENT NUMBER: 141:319758
TITLE: Physical Stability and Solubility Advantage from **Amorphous Celecoxib**: The Role of Thermodynamic Quantities and Molecular Mobility
AUTHOR(S): Gupta, Piyush; Chawla, Garima; Bansal, Arvind K.
CORPORATE SOURCE: Department of Pharmaceutical Technology (Formulations), National Institute of Pharmaceutical Education and Research, Punjab, 160062, India
SOURCE: Molecular Pharmaceutics (2004), 1(6), 406-413
CODEN: MPOHBP; ISSN: 1543-8384
PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal
LANGUAGE: English

AB Glassy pharmaceuticals, characterized by excess thermodn. properties, are theor. more soluble than their crystalline counterparts. The practical solubility advantage of the amorphous form of celecoxib (CEL) is lost due to its proclivity to lose energy and undergo solvent-mediated devitrification. Theor. assessment of solubility advantage using differences in isobaric heat capacities (Cp) revealed a 7-21-fold enhancement in the solubility of the amorphous form over that of the crystalline state of CEL. The present study attempts to unveil these differences between exptl. and theor. solubility using thermodn. parameters such as free energy, enthalpy, and entropy. Amorphous CEL exhibited 1.3-1.5 times enhancement in Cp over that for the crystalline form. The zero and critical mol. mobility regions, represented by Kauzmann temperature (TK) and glass transition temperature (Tg), were found to lie near 246 and 323 K, resp., for amorphous CEL. The fictive temperature (Tf), an indicator of the configurational entropy of glass, was determined for glassy CEL, signifying the retention of considerable mol. mobility in the glassy phase that may favor nucleation even below Tg. Further, the estimation of various thermodn. quantities and strength/fragility parameters (D = 11.5 and m = 67.0) postulated the classification of glassy CEL into moderately fragile liquid, as per Angell's classification. A comprehensive understanding of such thermodn. facets of amorphous form would help in rationalizing the approaches toward development of stable glassy pharmaceuticals with adequate solubility advantage.

REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2004:120620 CAPLUS
DOCUMENT NUMBER: 140:169621
TITLE: Stable **amorphous celecoxib** composite and process therefor
INVENTOR(S): Zhuang, Hong; Gao, Ping
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 17 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004030151	A1	20040212	US 2003-431853	20030508
WO 2004041243	A2	20040521	WO 2003-US14563	20030508
WO 2004041243	A3	20041007		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2002-379968P P 20020513

AB A process is provided for preparing a celecoxib-crystallization inhibitor composite

wherein at least a detectable amount of celecoxib is in amorphous form. Also provided are compns. prepared according to such a process. Also provided is a method of treating a medical condition or disorder in a subject where treatment with a cyclooxygenase-2 inhibitor is indicated, comprising administering, for example orally, a composition of the invention in a therapeutically effective amount A mixture containing celecoxib 500 μg/mL, ethanol 1%, HPMC 2.5%, and water q.s. 100% was prepared and stirred at room temperature for 21 days, the precipitate was then removed from the mixture by filtration and washed with water. The precipitate was then analyzed using X-Ray diffraction to show there was no evidence of any crystalline material. The data suggested that celecoxib in precipitate separated from the mixture was amorphous.

L2 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:940035 CAPLUS
DOCUMENT NUMBER: 139:169110
TITLE: Enthalpy Relaxation Studies of Celecoxib Amorphous Mixtures
AUTHOR(S): Kakumanu, Vasu Kumar; Bansal, Arvind K.
CORPORATE SOURCE: Department of Pharmaceutical Technology, National Institute of Pharmaceutical Education and Research, Punjab, 160 062, India
SOURCE: Pharmaceutical Research (2002), 19(12), 1873-1878
CODEN: PHREEB; ISSN: 0724-8741
PUBLISHER: Kluwer Academic/Plenum Publishers
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The purpose of this study was to compare the structural relaxation and mol. mobility of **amorphous celecoxib** (CEL) with that of CEL amorphous mixts. consisting of various excipients and to study the effect of different excipients on the relaxation of high-energy amorphous systems. The measurement of glass transition temps. (Tg) and enthalpy relaxation were performed using differential scanning calorimetry. The interactions between drug and excipients and the absence of crystalline forms were further confirmed by conducting Fourier transform IR spectroscopic and x-ray powder diffraction studies on same samples. All samples exhibited a single Tg value. Polymers had a prominent effect on the lowering of the relaxation rate in amorphous CEL. The lowering of the rate of relaxation was directly dependent on the concentration and type of polymer used. The total enthalpy required for relaxation was same, although additives affected the rate of relaxation. In absence of any specific interactions during Fourier transform IR studies, it was concluded that the anti-plasticizing activity of polymers is responsible for the stabilization of CEL amorphous systems. Glassy amorphous dispersions of CEL exhibited a complex type of relaxation pattern, which failed to fit in Kohlrausch-Williams-Watts equation with respect to calcn. of relaxation time consts.

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2001:435052 CAPLUS
DOCUMENT NUMBER: 135:37203
TITLE: Solid-state form of celecoxib having enhanced bioavailability
INVENTOR(S): Hageman, Michael J.; He, Xiaorong; Kararli, Tugrul T.; Mackin, Lesley A.; Miyake, Patricia J.; Rohrs, Brian R.; Stefanski, Kevin J.
PATENT ASSIGNEE(S): Pharmacia Corporation, USA

SOURCE: PCT Int. Appl., 43 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 11
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001042221	A1	20010614	WO 2000-US32435	20001206
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
NZ 514059	A	20040227	NZ 2000-514059	20001201
US 2004087640	A1	20040506	US 2000-728040	20001201
AU 2001019311	A5	20010618	AU 2001-19311	20001206
EP 1150959	A1	20011107	EP 2000-982255	20001206
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
US 2002006951	A1	20020117	US 2000-730663	20001206
BR 2000008058	A	20020326	BR 2000-8058	20001206
JP 2004500358	T2	20040108	JP 2001-543522	20001206
NZ 513964	A	20040130	NZ 2000-513964	20001206
NZ 513960	A	20040227	NZ 2000-513960	20001206
NO 2001003855	A	20011005	NO 2001-3855	20010808
ZA 2001007146	A	20020829	ZA 2001-7146	20010829
ZA 2001007148	A	20021129	ZA 2001-7148	20010829
ZA 2001007149	A	20030228	ZA 2001-7149	20010829
ZA 2002007445	A	20031013	ZA 2002-7445	20020917

PRIORITY APPLN. INFO.:

US 1999-169856P	P	19991209
US 2000-730663	A	20001206
WO 2000-US32435	W	20001206

AB The selective cyclooxygenase-2 inhibitory drug celecoxib is provided in amorphous form. Also provided is a celecoxib-crystallization inhibitor composite comprising particles of **amorphous celecoxib** or a celecoxib drug substance of the invention in intimate association with one or more crystallization inhibitors, for example polymers. Also provided is a pharmaceutical composition comprising such a celecoxib-crystallization inhibitor composite and one or more excipients. Celecoxib drug substance and polymer composites with HPMC and PVP were prepared by spray drying. Also provided is a method of treating a medical condition or disorder in a subject where treatment with a cyclooxygenase-2 inhibitor is indicated, comprising administering, for example orally, a composition of the invention in a therapeutically effective amount

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 5 OF 5 CAPLUS
ACCESSION NUMBER: 2001:434782 CAPLUS
DOCUMENT NUMBER: 135:37187
TITLE: Solid-state form of celecoxib having enhanced bioavailability

09730663.trn 12/08/2004

INVENTOR(S): Hageman, Michael J.; He, Xiaorong; Kararli, Tugrul T.; Mackin, Lesley A.; Miyake, Patricia J.; Rohrs, Brian R.; Stefanski, Kevin J.
PATENT ASSIGNEE(S): Pharmacia Corporation, USA
SOURCE: PCT Int. Appl., 40 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 11
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001041536	A2	20010614	WO 2000-US30180	20001204
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
NZ 514059	A	20040227	NZ 2000-514059	20001201
US 2004087640	A1	20040506	US 2000-728040	20001201
AU 2001020412	A5	20010618	AU 2001-20412	20001204
US 2002006951	A1	20020117	US 2000-730663	20001206
NZ 513964	A	20040130	NZ 2000-513964	20001206
NZ 513960	A	20040227	NZ 2000-513960	20001206
ZA 2001007146	A	20020829	ZA 2001-7146	20010829
ZA 2001007148	A	20021129	ZA 2001-7148	20010829
ZA 2001007149	A	20030228	ZA 2001-7149	20010829
ZA 2002007445	A	20031013	ZA 2002-7445	20020917
PRIORITY APPLN. INFO.:			US 1999-169856P P	19991209
			WO 2000-US30180 W	20001204

AB The selective cyclooxygenase-2 inhibitory drug celecoxib is provided in amorphous form. Also provided is a celecoxib drug substance wherein the celecoxib is present, in at least a detectable amount, as **amorphous celecoxib.** Also provided is a celecoxib-crystallization inhibitor composite comprising particles of **amorphous celecoxib** or a celecoxib drug substance of the invention in intimate association with one or more crystallization inhibitors, for example polymers. Also provided is a pharmaceutical composition comprising such a celecoxib-crystallization inhibitor composite and one or more excipients. Also provided are processes for preparing **amorphous celecoxib**, a celecoxib drug substance of the invention, a celecoxib-crystallization inhibitor composite of the invention, and a pharmaceutical composition of the invention. Also provided is a method of treating a medical condition or disorder in a subject where treatment with a cyclooxygenase-2 inhibitor is indicated, comprising administering, for example orally, a composition of the invention in a therapeutically effective amount

=> d l3 ibib abs hitstr tot

L3 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:940035 CAPLUS
DOCUMENT NUMBER: 139:169110

TITLE: Enthalpy Relaxation Studies of Celecoxib Amorphous Mixtures

AUTHOR(S): Kakumanu, Vasu Kumar; Bansal, Arvind K.
CORPORATE SOURCE: Department of Pharmaceutical Technology, National Institute of Pharmaceutical Education and Research, Punjab, 160 062, India

SOURCE: Pharmaceutical Research (2002), 19(12), 1873-1878
CODEN: PHREEB; ISSN: 0724-8741
PUBLISHER: Kluwer Academic/Plenum Publishers
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The purpose of this study was to compare the structural relaxation and mol. mobility of **amorphous celecoxib** (CEL) with that of CEL amorphous mixts. consisting of various excipients and to study the effect of different excipients on the relaxation of high-energy amorphous systems. The measurement of glass transition temps. (Tg) and enthalpy relaxation were performed using differential scanning **calorimetry**. The interactions between drug and excipients and the absence of crystalline forms were further confirmed by conducting Fourier transform IR spectroscopic and x-ray powder diffraction studies on same samples. All samples exhibited a single Tg value. Polymers had a prominent effect on the lowering of the relaxation rate in amorphous CEL. The lowering of the rate of relaxation was directly dependent on the concentration and type of polymer used. The total enthalpy required for relaxation was same, although additives affected the rate of relaxation. In absence of any specific interactions during Fourier transform IR studies, it was concluded that the anti-plasticizing activity of polymers is responsible for the stabilization of CEL amorphous systems. Glassy amorphous dispersions of CEL exhibited a complex type of relaxation pattern, which failed to fit in Kohlrausch-Williams-Watts equation with respect to calcn. of relaxation time consts.

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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CA SUBSCRIBER PRICE	-4.20	-4.20

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NEWS	3	SEP 01	INPADOC: New family current-awareness alert (SDI) available
NEWS	4	SEP 01	New pricing for the Save Answers for SciFinder Wizard within STN Express with Discover!
NEWS	5	SEP 01	New display format, HITSTR, available in WPIDS/WPINDEX/WPIX
NEWS	6	SEP 27	STANDARDS will no longer be available on STN
NEWS	7	SEP 27	SWETSCAN will no longer be available on STN
NEWS	8	OCT 28	KOREAPAT now available on STN
NEWS	9	NOV 18	Current-awareness alerts, saved answer sets, and current search transcripts to be affected by CERAB, COMPUAB, ELCOM, and SOLIDSTATE reloads
NEWS	10	NOV 30	PHAR reloaded with additional data
NEWS	11	DEC 01	LISA now available on STN
NEWS EXPRESS			OCTOBER 29 CURRENT WINDOWS VERSION IS V7.01A, CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP), AND CURRENT DISCOVER FILE IS DATED 11 AUGUST 2004
NEWS HOURS			STN Operating Hours Plus Help Desk Availability
NEWS INTER			General Internet Information
NEWS LOGIN			Welcome Banner and News Items
NEWS PHONE			Direct Dial and Telecommunication Network Access to STN
NEWS WWW			CAS World Wide Web Site (general information)

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FILE 'HOME' ENTERED AT 12:54:51 ON 08 DEC 2004

=> s amorphous celecoxib
THIS COMMAND NOT AVAILABLE IN THE CURRENT FILE
Some commands only work in certain files. For example, the EXPAND command can only be used to look at the index in a file which has an index. Enter "HELP COMMANDS" at an arrow prompt (=>) for a list of commands which can be used in this file.

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COST IN U.S. DOLLARS                          SINCE FILE      TOTAL
                                                 ENTRY    SESSION
FULL ESTIMATED COST                               0.21       0.21

FILE 'CAPLUS' ENTERED AT 12:55:19 ON 08 DEC 2004
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FILE COVERS 1907 - 8 Dec 2004  VOL 141 ISS 24
FILE LAST UPDATED: 7 Dec 2004  (20041207/ED)

  This file contains CAS Registry Numbers for easy and accurate
  substance identification.


=> s amorphous celecoxib
        237291 AMORPHOUS
             4 AMORPHOUSES
        237295 AMORPHOUS
                 (AMORPHOUS OR AMORPHOUSES)
          1332 CELECOXIB
L1           5 AMORPHOUS CELECOXIB
                 (AMORPHOUS(W)CELECOXIB)

=> s l1 and glass transition
        655203 GLASS
        125458 GLASSES
        682664 GLASS
                 (GLASS OR GLASSES)
        863533 TRANSITION
        241366 TRANSITIONS
        968945 TRANSITION
                 (TRANSITION OR TRANSITIONS)
         70936 GLASS TRANSITION
                 (GLASS(W)TRANSITION)
L2           2 L1 AND GLASS TRANSITION

=> s l1 and glass(w)transition
        655203 GLASS
        125458 GLASSES
        682664 GLASS
                 (GLASS OR GLASSES)
        863533 TRANSITION
        241366 TRANSITIONS
        968945 TRANSITION
                 (TRANSITION OR TRANSITIONS)
         70936 GLASS(W)TRANSITION
```

L3 2 L1 AND GLASS(W)TRANSITION

=> s l3 and calorimetry
52747 CALORIMETRY
20 CALORIMETRIES
52758 CALORIMETRY
(CALORIMETRY OR CALORIMETRIES)
L4 1 L3 AND CALORIMETRY

=> d l4 ibib abs hitstr tot

L4 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:940035 CAPLUS
DOCUMENT NUMBER: 139:169110
TITLE: Enthalpy Relaxation Studies of Celecoxib Amorphous Mixtures
AUTHOR(S): Kakumanu, Vasu Kumar; Bansal, Arvind K.
CORPORATE SOURCE: Department of Pharmaceutical Technology, National Institute of Pharmaceutical Education and Research, Punjab, 160 062, India
SOURCE: Pharmaceutical Research (2002), 19(12), 1873-1878
CODEN: PHREEB; ISSN: 0724-8741
PUBLISHER: Kluwer Academic/Plenum Publishers
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The purpose of this study was to compare the structural relaxation and mol. mobility of **amorphous celecoxib** (CEL) with that of CEL amorphous mixts. consisting of various excipients and to study the effect of different excipients on the relaxation of high-energy amorphous systems. The measurement of **glass transition** temps. (Tg) and enthalpy relaxation were performed using differential scanning **calorimetry.** The interactions between drug and excipients and the absence of crystalline forms were further confirmed by conducting Fourier transform IR spectroscopic and x-ray powder diffraction studies on same samples. All samples exhibited a single Tg value. Polymers had a prominent effect on the lowering of the relaxation rate in amorphous CEL. The lowering of the rate of relaxation was directly dependent on the concentration and type of polymer used. The total enthalpy required for relaxation was same, although additives affected the rate of relaxation. In absence of any specific interactions during Fourier transform IR studies, it was concluded that the anti-plasticizing activity of polymers is responsible for the stabilization of CEL amorphous systems. Glassy amorphous dispersions of CEL exhibited a complex type of relaxation pattern, which failed to fit in Kohlrausch-Williams-Watts equation with respect to calcn. of relaxation time consts.
REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d l3 ibib abs hitstr tot

L3 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2004:782310 CAPLUS
DOCUMENT NUMBER: 141:319758
TITLE: Physical Stability and Solubility Advantage from **Amorphous Celecoxib**: The Role of Thermodynamic Quantities and Molecular Mobility
AUTHOR(S): Gupta, Piyush; Chawla, Garima; Bansal, Arvind K.
CORPORATE SOURCE: Department of Pharmaceutical Technology (Formulations), National Institute of Pharmaceutical

SOURCE: Education and Research, Punjab, 160062, India
Molecular Pharmaceutics (2004), 1(6), 406-413
CODEN: MPOHBP; ISSN: 1543-8384
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Glassy pharmaceuticals, characterized by excess thermodn. properties, are theor. more soluble than their crystalline counterparts. The practical solubility advantage of the amorphous form of celecoxib (CEL) is lost due to its proclivity to lose energy and undergo solvent-mediated devitrification. Theor. assessment of solubility advantage using differences in isobaric heat capacities (Cp) revealed a 7-21-fold enhancement in the solubility of the amorphous form over that of the crystalline state of CEL. The present study attempts to unveil these differences between exptl. and theor. solubility using thermodn. parameters such as free energy, enthalpy, and entropy. Amorphous CEL exhibited 1.3-1.5 times enhancement in Cp over that for the crystalline form. The zero and critical mol. mobility regions, represented by Kauzmann temperature (TK) and **glass transition** temperature (Tg), were found to lie near 246 and 323 K, resp., for amorphous CEL. The fictive temperature (Tf), an indicator of the configurational entropy of glass, was determined for glassy CEL, signifying the retention of considerable mol. mobility in the glassy phase that may favor nucleation even below Tg. Further, the estimation of various thermodn. quantities and strength/fragility parameters (D = 11.5 and m = 67.0) postulated the classification of glassy CEL into moderately fragile liquid, as per Angell's classification. A comprehensive understanding of such thermodn. facets of amorphous form would help in rationalizing the approaches toward development of stable glassy pharmaceuticals with adequate solubility advantage.

REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2002:940035 CAPLUS
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TITLE: Enthalpy Relaxation Studies of Celecoxib Amorphous Mixtures
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AB The purpose of this study was to compare the structural relaxation and mol. mobility of **amorphous celecoxib** (CEL) with that of CEL amorphous mixts. consisting of various excipients and to study the effect of different excipients on the relaxation of high-energy amorphous systems. The measurement of **glass transition** temps. (Tg) and enthalpy relaxation were performed using differential scanning calorimetry. The interactions between drug and excipients and the absence of crystalline forms were further confirmed by conducting Fourier transform IR spectroscopic and x-ray powder diffraction studies on same samples. All samples exhibited a single Tg value. Polymers had a prominent effect on the lowering of the relaxation rate in amorphous CEL. The lowering of the rate of relaxation was directly dependent on the concentration and type of polymer used. The total enthalpy required for relaxation was same, although additives affected the rate of relaxation. In absence of any

specific interactions during Fourier transform IR studies, it was concluded that the anti-plasticizing activity of polymers is responsible for the stabilization of CEL amorphous systems. Glassy amorphous dispersions of CEL exhibited a complex type of relaxation pattern, which failed to fit in Kohlrausch-Williams-Watts equation with respect to calcn. of relaxation time consts.

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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